

RESEARCH PROGRESS REPORT FOR THE QUARTER ENDING: 2nd

Wisconsin Department of Transportation
DT1241 2009

Research, Development and Technology Transfer	
Program: (Choose One) <input type="checkbox"/> Policy Research <input type="checkbox"/> Pooled Fund TPF # <input checked="" type="checkbox"/> Wisconsin Highway Research Program <input type="checkbox"/> Other	
Project Title: Effective Depth of Soil Compaction in Relation to Applied Compactive Energy	
Administrative Contact/Phone #: Daniel Yeh	WisDOT Project ID(s): 0092-08-11
WisDOT Technical Contact/Phone #: Bob Arndorfer	Other Project ID:
Project Investigator/Phone # (agency & contact): Dante Fratta & Haifang Wen - University of Wisconsin-Madison	Approved Starting Date: 10/10/2007
WisDOT Comments:	Original End Date: 4/10/2009
	Current End Date: 10/10/2009
Sponsor: Wisconsin Department of Transportation	Number of Extensions: 1

Schedule Status:

- ☐ On schedule ☐ Ahead of schedule
☐ On revised schedule ☒ Behind schedule (Please explain below)

Total Project Budget	Expenditures Current Quarter	Total Expenditures	% Funds Expended	% Work Completed
\$54,914.00	\$0.00	\$54,914.00	100%	99%

Project Description:

The determination of the appropriate lift thicknesses used in embankment construction operations has important economic and engineering implications for the design and construction of roads, levees and dams. For example, small lift thicknesses may cause excessive construction costs while large lift thicknesses may reduce the compaction effectiveness and compromise the integrity of the embankment. This research proposal uses experimental results and numerical analyses to evaluate the effective depth of compaction. These results and analyses provide engineering understanding of the problem and justify recommendations about maximum lift thickness to be used in WisDOT embankment construction projects.

This research program collects field data and develops analyses needed to determine optimum lift thickness for WisDOT embankment construction projects. The results are helping to establish relationships between the applied compaction energy and the level of compaction achieved at increasing depths for a number of different soils. The data, analyses, and correlations will help WisDOT officials in proposing possible revisions to current constructions specifications including the need to change the established 8-in lift thickness in the construction of compacted embankments. The successful completion of this research will also help WisDOT officials in improving construction operations by creating more stable and economical subgrade structures.

Progress This Quarter: (Includes project committee meetings, work plan status, contract status, significant progress, etc.)

During this quarter, the research team submitted the draft of the final report to the WisDOT TOC for comments. The research team also worked on the draft of three journal manuscripts as part of a PhD dissertation. The first manuscript was submitted on late August (see attached draft).

Anticipated Work Next Quarter:

During the ninth quarter, the research team will give a presentation to the TOC members summarizing the research results, correct the draft report as suggested by TOC members, and submit the final report to DOT officials. We also expect to complete the other two manuscripts.

Circumstances Affecting Progress and/or Budget:

Scheduling conflicts with TOC on final presentation and getting final report comments. A no-cost extension is being requested.

Gantt Chart:

Phase Number	24 months							
	Quarter 1	Quarter 2	Quarter 3	Quarter 4	Quarter 5	Quarter 6	Quarter 7	Quarter 8
Phase I								
Phase II								
Phase III								
Phase IV								
Phase V								incomplete